

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for forming a solder resist pattern comprising the steps of:

pre-treating both sides of a double-sided printed circuit board to produce first and second pre-treated sides on first and second sides of the printed circuit board, wherein pre-treating includes scrubbing;

laminating a semi-cured thermosetting film on the first and second pre-treated sides of the printed circuit board to produce first and second semi-cured films on the first and second sides of the printed circuit board, wherein the thermosetting film is the outermost surface of the printed circuit board; and

irradiating a laser beam to the first and second semi-cured films according to a solder resist mask pattern to selectively remove the first and second films to expose circuit patterns to be brazed and leaving the thermosetting film as a solder resist mask over areas other than the circuit patterns to be brazed, the solder resist mask pattern having been previously designed prior to irradiating.

2. (Canceled)

3. (Currently amended) A method for forming a solder resist pattern comprising the steps of:

pre-treating both sides of a double-sided printed circuit board to produce first and second pre-treated sides on first and second sides of the printed circuit board, wherein pre-treating includes scrubbing;

laminating a semi-cured thermosetting film on the first and second pre-treated sides of the printed circuit board to produce first and second semi-cured films on the first and second

sides of the printed circuit board, wherein the thermosetting film is the outermost surface of the printed circuit board;

curing the first and second semi-cured films to produce first and second cured films on the first and second sides of the printed circuit board; and

irradiating a laser beam to the first and second cured films according to a solder resist mask pattern to selectively remove the first and second films to expose circuit patterns to be brazed and leaving the thermosetting film as a solder resist mask over areas other than the circuit patterns to be brazed, the solder resist mask pattern having been previously designed prior to irradiating.

4. (Currently amended) A method for forming a solder resist pattern comprising the steps of:

pre-treating a portion exposed from a plurality of layers constituting a multilayer printed circuit board fabricated by a buildup process to produce a pretreated portion;

laminating a semi-cured thermosetting film on the pretreated portion to produce a laminated semi-cured thermosetting film, wherein the thermosetting film is the outermost surface of a layer; and

irradiating a laser beam to the laminated semi-cured thermosetting film according to a solder resist mask pattern to selectively remove the thermosetting film to expose circuit patterns to be brazed and leaving the thermosetting film as a solder resist mask over areas other than the circuit patterns to be brazed.

5. (Original) The method for forming a solder resist pattern according to claim 4, wherein the pretreatment includes scrubbing.

6. (Currently amended) A method for forming a solder resist pattern comprising the steps of:

pre-treating a portion exposed from a plurality of layers constituting a multilayer printed circuit board fabricated by a buildup process to produce a pretreated portion;

laminating a semi-cured thermosetting film on the pretreated portion to produce a laminated semi-cured thermosetting film, wherein the thermosetting film is the outermost surface of a layer;

curing the laminated semi-cured thermosetting film to produce a laminated cured thermosetting film; and

irradiating a laser beam to the laminated cured thermosetting film according to a solder resist mask pattern to selectively remove the laminated cured thermosetting film to expose circuit patterns to be brazed and leaving the thermosetting film as a solder resist mask over areas other than the circuit patterns to be brazed.

7. (Currently amended) A method for forming a solder resist pattern on an outer layer in the fabrication of a multilayer printed circuit board using the parallel process comprising the steps of:

pre-treating ~~a portion~~ an outer layer having an exposed ~~from a plurality of layers constituting a multilayer printed circuit board fabricated in a parallel manner~~ surface to produce a pretreated portion surface;

laminating a semi-cured thermosetting film on the pretreated ~~portion~~ surface to produce a laminated semi-cured thermosetting film, wherein the thermosetting film is the outermost surface of the outer layer; and

irradiating a laser beam to the laminated semi-cured thermosetting film according to a solder resist mask pattern to selectively remove the thermosetting film to expose circuit patterns

to be brazed and leaving the thermosetting film as a solder resist mask over areas other than the circuit patterns to be brazed.

8. (Original) The method for forming a solder resist pattern according to claim 7, wherein the pre-treatment includes scrubbing.

9. (Currently amended) A method for forming a solder resist pattern on an outer layer in the fabrication of a multilayer printed circuit board using the parallel process comprising the steps of:

~~pre-treating a portion~~ an outer layer having an exposed ~~from a plurality of layers constituting a multilayer printed circuit board fabricated in a parallel manner~~ surface to produce a pretreated ~~portion~~ surface;

laminating a semi-cured thermosetting film on the pretreated portion to produce a laminated semi-cured thermosetting film, wherein the thermosetting film is the outermost surface of the outer layer;

curing the laminated semi-cured thermosetting film to produce a laminated cured thermosetting film; and

irradiating a laser beam to the laminated cured thermosetting film according to a solder resist mask pattern to selectively remove the laminated cured thermosetting film to expose circuit patterns to be brazed and leaving the thermosetting film as a solder resist mask over areas other than the circuit patterns to be brazed.

10. (Previously presented) The method of claim 1, wherein the laser is a yttrium aluminum garnet laser, excimer laser, or carbon dioxide laser.

11. (Previously presented) The method of claim 4, wherein the laser is a yttrium aluminum garnet laser, excimer laser, or carbon dioxide laser.

12. (Previously presented) The method of claim 7, wherein the laser is a yttrium aluminum garnet laser, excimer laser, or carbon dioxide laser.

13. (Currently amended) A method for forming a solder resist pattern, comprising:
pre-treating both sides of a double-sided printed circuit board to provide pre-treated sides of a printed circuit board;

applying a semi-cured thermosetting film on the pre-treated sides of the printed circuit board to provide a thermoset film on the printed circuit board, wherein the thermoset film is the outermost surface of the printed circuit board; and

following applying the semi-cured thermosetting film, irradiating a laser beam on the semi-cured thermoset film to selectively remove the thermoset film to ~~provide a solder resist pattern~~ expose circuit patterns to be brazed and leaving the thermoset film as a solder resist mask over areas other than the circuit patterns to be brazed.

14. (Previously presented) The method of claim 13, wherein pre-treating includes scrubbing.

15. (Currently amended) A method for forming a solder resist pattern, comprising:
pre-treating both sides of a double-sided printed circuit board to provide pre-treated sides of a printed circuit board;

applying a semi-cured thermosetting film on the pre-treated sides of the printed circuit board to provide a thermoset film on the printed circuit board, wherein the thermoset film is the outermost surface of the printed circuit board;

curing the thermosetting film to provide a cured thermoset film; and

following curing, irradiating a laser beam on the cured thermoset film to selectively remove the thermoset film to ~~provide a solder resist pattern~~ expose circuit patterns to be brazed and leaving the thermoset film as a solder resist mask over areas other than circuit patterns to be brazed.

16-21. (Canceled)

22. (Currently amended) A method for forming a solder resist pattern, comprising:

obtaining a substrate with an exposed circuit pattern on the surface thereof;

treating the substrate and the exposed circuit pattern to provide a treated circuit pattern;

applying a semi-cured thermosetting film to the substrate to cover the exposed and treated circuit pattern to provide a thermosetting film as the outermost surface layer of the substrate; and

following applying the thermosetting film, removing the semi-cured thermosetting film in selected areas with a laser beam to ~~produce a substrate having a solder resist mask pattern~~ expose circuit patterns to be brazed and leaving the thermosetting film as a solder resist mask over areas other than the circuit patterns to be brazed.

23. (Previously presented) The method of claim 22, comprising obtaining two of the substrates having a solder resist mask and placing one or more insulating layers between said two substrates so that the solder resist mask patterns of said two substrates are the outermost layers, then pressing the two substrates and one or more insulating layers to fabricate a multi-layer printed circuit board.

24. (Previously presented) The method of claim 22, wherein the substrate comprises a double-sided printed circuit board having circuit patterns on both outermost sides of the printed circuit board and the thermosetting film is applied to cover the circuit patterns on both outermost surfaces and the thermosetting film on both sides is irradiated with a laser beam to provide a solder resist mask pattern on both outermost sides of the double-sided printed circuit board.

25. (New) The method of Claim 7, further comprising obtaining a second outer layer having a solder resist mask pattern, placing one or more insulating layers between said two outer layers so that the solder resist mask patterns of said two outer layers are the outermost layers, then pressing the two outer layers and the one or more insulating layers to fabricate a multilayered printed circuit board.

26. (New) The method of Claim 9, further comprising obtaining a second outer layer having a solder resist mask pattern, placing one or more insulating layers between said two outer layers so that the solder resist mask patterns of said two outer layers are the outermost layers, then pressing the two outer layers and the one or more insulating layers to fabricate a multilayered printed circuit board.